Features

- Low Power Consumption (Vcc=5V, 9mW typ.)
- Low Power Supply Voltage (Vcc=5V)
- Built-in Filter (with optional center frequency 38KHz typ.)
- Possible to Direct Connection to a Photodiode.
- Open Collector Output (Possible to Direct Connection to TTL and CMOS Input).
- High Immunity against Ambient Light.
- Absolute Immunity against CW Noise.

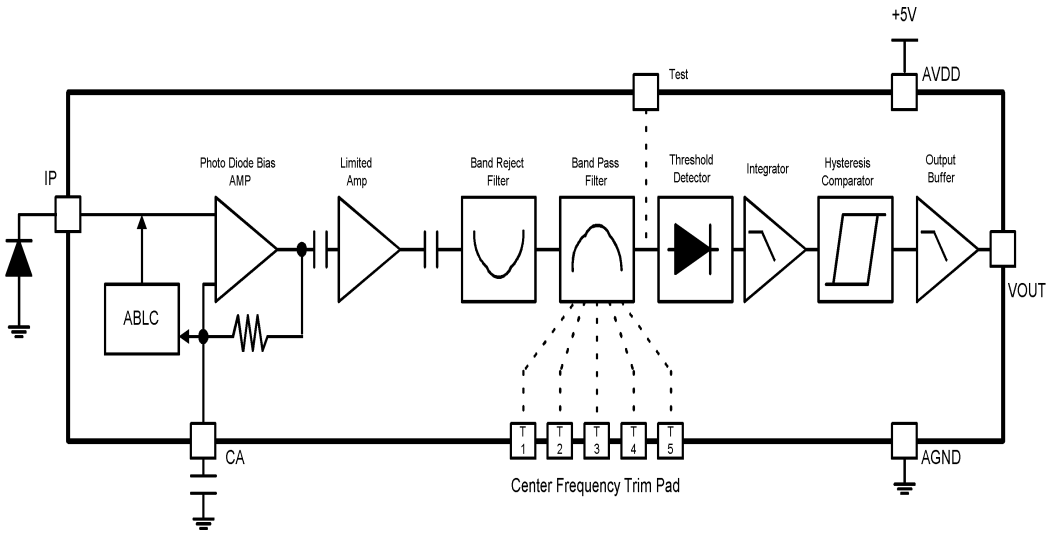
General Description

The AT8100 is specifically developed for use in infrared remote control system receiving preamplifier. Capable of accepting a photodiode directly, it is comprised of a primary stage amplifier, limiter amplifier, BPF, signal waveform detecting circuit, waveform shaping circuit.

Applications

- Infrared Receiver Module

Block Diagram



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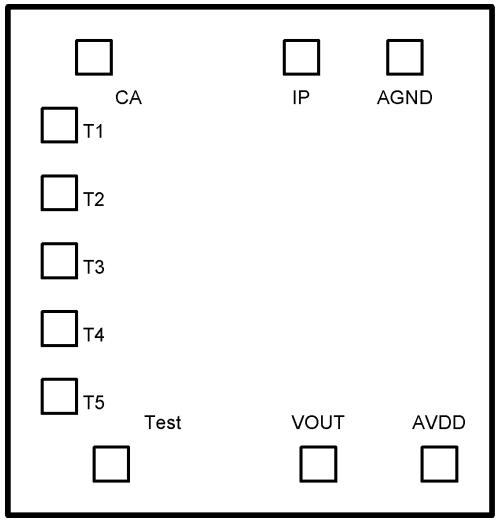
Pad Configuration



Absolute Maximum Ratings

(T_a=+25^{0}C)

Parameter	Symbol	Condition	Rated Value		Unit
			Min.	Max.	
Power supply voltage	AVDD	—	4.5	5.5	V
Input Voltage	V_{IP}	—	—	5	V_{P-P}
Operating temperature	T_{OPr}	—	0	+75	^{0}C
Storage temperature	T_{stg}	—	-55	+125	^{0}C

Recommended Operating Conditions

(Ta=+25^{0}C)

Parameter	Symbol	Values			Unit
		Min.	Typ.	Max.	
Power supply voltage	AVDD	4.7	--	5.3	V

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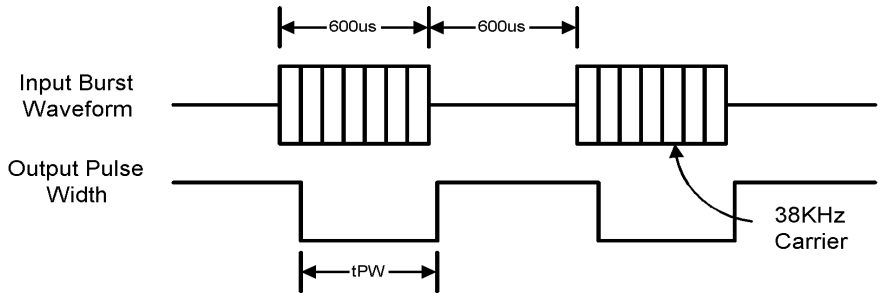
Electrical Characteristics

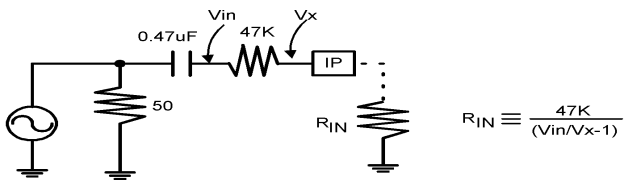
(AVDD=5.0V, Ta=+25°C)

Parameter	Symbol	Condition	Values			Unit
			Min.	Typ.	Max.	
Input Pin Voltage	V_{IP1}	I_{IP}=0 , Pin IP Open	2.0	2.5	3.1	V
	V_{IP2}	I_{IP}=-300μA	0.6	1.0	1.7	V
Low Level Output Voltage	V_{OL}		-	0.2	0.4	V
High Level Output Voltage	V_{OH}		4.5	5.0	-	V
Output Leakage Current	I_{OH}		-	0	2.2	μA
Voltage Gain	AV	38KHz cw 50μV_{P-P}	74	-	84	dB
Input Impedance	R_{IN}	38KHz cw 0.2V_{P-P} (note 2)	27	40	55	KΩ
BPF Bandwidth	f_{BW}	-3dB bandwidth 50μV_{P-P}	4	8	-	KHz
Output Pulse Width (1)	t_{PW1}	38KHz burst wave 50μV_{P-P} (note 1)	440	-	770	μs
Output Pulse Width (2)	tPW2	38KHz burst wave 50mV_{P-P} (note 1)	440	-	770	μs
Supply Current	I_{AVDD}		-	2	2.8	mA

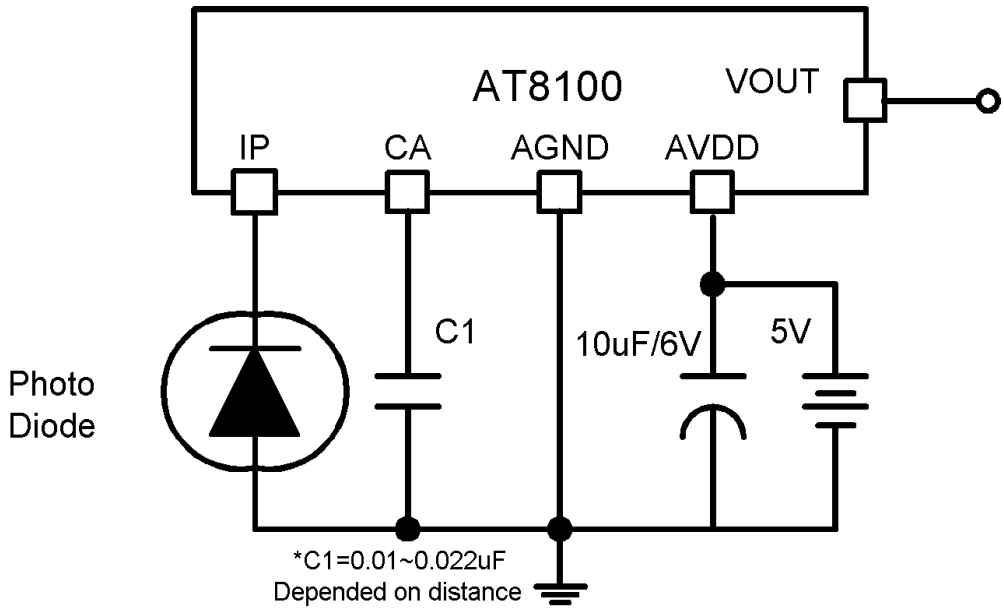
*1



*2



Application Circuit



Pad Location

Pin	Name	X	Y	Description
01	AGND	750.5	804.0	Ground
02	IP	546.5	804.0	Signal Input
03	CA	190.7	804.0	Gain Setting
04	T1	91.7	681.6	Test(No use for Application)
05	T2	91.7	565.6	
06	T3	91.7	449.6	
07	T4	91.7	333.6	
08	T5	91.7	217.6	
09	V04	190.7	94.0	Test(No use for Application)
10	VOUT	546.4	94.0	Output
11	AVDD	750.5	94.0	Power Input